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ABSTRACT

Students who are involved in middle school alternative education programs are often labeled as severely disruptive. They have a history of physical violence, abusive language, truancy, and sometimes police arrests and juvenile detention records. These students need to learn how to deal with stress-producing events in a more socially acceptable manner. A study was conducted to examine the feasibility and effects of implementing relaxation training with middle school alternative students (N=8) in the classroom setting, and to determine the validity and reliability of using biofeedback. The relaxation training program was implemented for 3 months. Target behaviors were tallied for the final 2 weeks of the program and were compared to behaviors tallied in the first 2 weeks of the program. An analysis of the results revealed that relaxation training could be successfully implemented in an alternative classroom with limited teacher training and classroom disruption. Comparison of pre- and post-treatment behaviors revealed a 20% decrease in absenteeism, an 80% decrease in students walking out of class, and an 81% reduction in the use of profanity. There were no fights or referrals written during the last 2 weeks of implementation. The biofeedback instruments proved to be valid and reliable measures of the relaxation state. These findings suggest that relaxation training can be beneficial to adolescents and can be implemented in the regular school curriculum. (NB)

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PRACTICUM REPORT

Center for the
Advancement of Education
Ed.D. Program

Implementation of a Program
to Reduce Stress in Middle School
Alternative Education Students

By
Gint Nenortas

CG 019913

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Implementation of a Program to Reduce Stress in Middle School Alternative Education Students

by

Gint Nenortas

Cluster XVIII

A Practicum Report Presented to the Ed. D. Program in Early and Middle Childhood

NOVA UNIVERSITY

1986

Observer: Mr. Andrew Luciani

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ABSTRACT

Implementation of a Program to Reduce Stress in Middle School Alternative Education Students. Nenortas, Gint V., 1986: Practicum Report, Nova University Ed.D. Program in Early and Middle Childhood.
Descriptors: Adolescents / Coping / Stress Management / Stress Variables / Middle School / Relaxation Training / Alternative Schools / Behavior Change.

This practicum addressed the need for teaching students how to deal with stress-producing events in a more socially acceptable way. These students have been labeled as severely disruptive. They have a history of physical violence, abusive language, truancy and in many cases, police arrests and juvenile detention records. This program measures affective changes with a program of relaxation training for eight alternative Middle School students.

The author's goals were to examine the feasibility and effects of implementing relaxation training with Middle School alternative students in the classroom setting, and to determine the validity and reliability of using biofeedback as a tool. The specific objectives were: (1) to decrease absenteeism; (2) to decrease walking out of class; (3) to decrease fighting; (4) to decrease referrals; (5) to decrease the use of profanity; (6) to have students acquire skills that will enable them to favorably modify central nervous system and cardiovascular responses to stress in a shorter period of time than before through the use of biofeedback and relaxation training over a three-month implementation period.

An analysis of the results showed that relaxation training can be successfully implemented in an alternative classroom with limited teacher training and classroom disruption. The first objective, to decrease absenteeism by 30%, was not reached. There was a 20% decrease in absenteeism. The second objective, to decrease students walking out of class by 30%, was exceeded. There was an 80% decrease. The third and fourth objectives, to decrease fighting and referrals by 80%, were surpassed. There were no fights or referrals written during the last two weeks of implementation. The fifth objective, to decrease the use of profanity by 80%, was also achieved by an 81% reduction. The sixth objective was also attained. The biofeedback instruments proved to be a valid and reliable measure of the relaxation state. All students showed improvement though they varied in their ability to elicite the relaxation responses. The findings suggest that relaxation training is beneficial to adolescents and can be implemented in the regular school curriculum.

CHAPTER I

INTRODUCTION

Author's Work Setting, Roles and Responsibilities

The Central Area Alternative Program is located on the New River Middle School campus in Fort Lauderdale, Florida. The largest of 28 municipalities, Fort Lauderdale is also the seat of Broward County government. One million two hundred thousand people live in Broward County which is located on the southeast coast of Florida between Palm Beach County to the north and Dade County to the south.

Among the cities of more than 500,000 population represented in the first quarter 1985 Cost of Living Index prepared by the American Chamber of Commerce Researchers Association, living costs ranged from 34.4% above the nation's average in New York City to 3.1% below the average in Indianapolis. In comparison, Fort Lauderdale was 9.2% above the national average for the quarter.

Perhaps best known for its beautiful beaches, balmy weather and miles of waterings, Fort Lauderdale is often referred to as the "Venice of America." The city has some 165 miles of navigable waterways. The annual average temperature is 75° with annual rainfall of 60.8 inches.

High technology has arrived in Broward County. More than 20,000 electronic and high tech employees work in more than 100 firms located in the county. Motorola and Gould Companies are the two largest manufacturing employers dealing with electronics and computers.

Per capita personal income is $12,300 while the average estimated buying income per household is $25,765.

The first school was built in Fort Lauderdale in 1899. In 1915 the Broward County School System was established. It has since grown to a total of 159 schools and special centers serving a student enrollment of 126,673 with 7,420 instructional personnel. Broward County is the ninth largest school system in the U.S.A. and has become the largest fully accredited school system in the nation.

The Florida Legislature has authorized District School Boards to establish educational alternatives for students whose interests, needs, and talents are not met in the traditional school environment--students who are unsuccessful, disinterested, or disruptive in that environment. In 1983-84 most of the elementary, middle and high schools in the district offered a variety of alternative programs. Among the various programs designed, a new center for severely disruptive and truant students was started in the Central Area of the school system. Called the Central Area Alternative

Program at New River Middle School, its program focuses upon academics, physical fitness and community service.

The author is a classroom teacher at the Central Area Alternative Program which is in its third year. His degrees are B.S. in Elementary Education and M.A. in Urban Education. He has 14 years of teaching experience ranging from third to eighth grade. He also worked as an adjunct professor at the University of Hartford associated with the Teacher Corps.

At the Central Area Alternative Program the author's primary responsibilities are those of a self-contained seventh and eighth grade alternative classroom teacher. The author is responsible for all of the academic areas on both grade levels.

CHAPTER II

STUDY OF THE PROBLEM

Students at the Central Area Alternative Program are exhibiting several aggressive outbursts per week because they do not seem to know how to deal with stress-producing events in a more socially accepted way. Each one of the author's students has been labeled as severely disruptive. They have a history of physical violence, abusive language, truancy, runaways and in many cases police arrests and juvenile detention records. Some of the arrests have ranged from armed robbery to the less serious crime of shoplifting. Nevertheless, violence has been a present characteristic with all of these students and it seems that no one along the way has been successful in stemming the hostility and anger that these children exhibit. For the most part, many of these parents have been driven to the point where they no longer know what to say or do.

It is the author's view that the court system apparently does not know what to do with this ever growing problem of youthful offenders, nor do they have the facilities to adequately try to rehabilitate these youngsters. Time after time these children are negatively reinforced. The judges verbally admonish the children for their "crimes", give them community service

hours as a punishment and send them on their way. There seems to be no consistency at the justice department level. This sends out mixed messages and confuses and frustrates everyone involved.

Evidence of the Problem

At the school level, the Central Area Alternative Program and its two sister alternative schools seem to be the last placement programs available for these disruptive students. The author found 183 referrals written last year for disciplinary infractions. These referrals came from a student body of 43 sixth, seventh and eighth graders. Most of these students were here for less than one half of a year. There were 35 boys and 8 girls. The ratio of black versus white students was 50/50.

The program's ultimate goal is to mainstream these students back into their feeder schools. At the time of this report, one student during the two years of this program has been successfully mainstreamed. Assuming the implementation of a successful intervention process, there would be an increase of prosocial behavior with a concurrent decrease in aggressive expression on the part of the students. This behavioral change should facilitate successful mainstreaming of a larger number of students.

Review of Literature

The review of literature does support the fact that children are under a great deal of stress and in many instances lack alternative means of dealing with this problem. Johns (1983) reported that children respond to stress by fighting back in any way they can. They might find that sarcastic, verbal attacks on other children or talking back to the teacher reduces their discomfort. By taking aggressive action, they can feel at least partially in control, at the same time, mentally distancing themselves from a learning task they feel is beyond their ability.

The causes of stress for young people have been researched by many. Stress comes from all sides. Whether based on fact or feeling, the pain of it is real to the children caught in its vice. Each study that has been done ranks teen stressors differently. At the top of the list, however, we find school as a major source of stress ("Current Health", 1983). It is not school itself that bothers teens, it is the desire and even the pressure to succeed at it. Linked to school stress are parents and their expectations. Unfortunately, some parents set unrealistic goals for their children. Unable to live up to these expectations, children come under much stress.

Comer (1982) states that by the time some children

reach the age of 12 or 13, parent-child communication has undergone serious deterioration. Sometimes members of the family live together without really talking to each other. Too often angry remarks and hostile "shots" take the place of helpful discussion.

When a child brings home a poor school performance report, the parent typically responds in ways that increase the child's already high level of stress. Use of put-downs, the stony silence of disappointment, punitive social restrictions, which cut the child off from unwinding activities with friends, and withdrawal of parental time spent with the child are all forms of punishment that increase a child's stress level and greatly exacerbate his school problems (Johns, 1983).

Brown (1983) reports that the family is clearly the preeminent continuing influence on the children. Families that are already under stress tend to have difficulty dealing with additional stress at home and at work. Children can pick up on such difficulties.

Aggressive behavior is often the result of the adolescents' inability to cope with stress (Miller, 1982). Obscenity is a powerful weapon especially when it traumatizes the people on whom it is being used. Teenagers demonstrate aggression in their bragging, in their threats, in their verbal humiliation of others.

To help lessen stressful situations, Chandler

(1981) states that parents and teachers alike should give the child limits or guidelines to follow. Limits help children develop self-control. In a predictable environment, children meet new challenges with more confidence. Realistic goals for the students should be clearly stated. Knowing one's academic status and understanding the expectations reduce stress. The ultimate goal is to help children develop inner controls to lessen stress.

Crowder (1983) makes four suggestions of how school can help young people understand stress. First, stress is experienced by almost everyone through external and internal pressures. People react differently to the same type of pressure and respond differently to the same treatment. It is important to identify personal stressors. Second, adolescents should be encouraged to explore how stress affects them. When they can focus on this then it is important to go to step three and help them implement skills for stress reduction. Finally, the teachers must lead their pupils to accept the responsibilities for alleviating their own excessive stress.

Children do not have the intellectual sophistication to understand the relationship of their perceptions to stress, but adults do. Therefore, it is up to the important adults in the lives of children to help kids

deal with stresses in their own lives (Medeiros (1984).

As mentioned earlier, school is a major source of stress to adolescents. Refusal to attend school is sometimes referred to as school-phobia (McAuley 1977). When the anxiety level in children is very high, it may inhibit their capacity to follow instructions, concentrate on task and can lead to poor classroom performance. Avoidance of school reduces this stressor, but creates others in the process.

All of the authors concur that there are many sources of stress in children's everyday lives. School is a major source of stress. Teachers can teach children how to recognize, face, overcome and subdue stress. After young people gain the ability to recognize stress, investigate its effect on them, learn to cope with it and accept responsibility for a large measure of this pressure on their lives, they will be better suited to live happy, well adjusted lives.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Statement of Goals and Objectives

At the conclusion of the three-month implementation period, students shall have acquired skills that would have enabled them to deal with stress-producing events in a more socially accepted way.

The following objectives refer to the difference between the last two weeks of the implementation phase, in contrast to the first two weeks of it. The performance objectives are as follows:

	Expected Behavior	Assessment Instrument	Standard of Performance
1.	Decreased absenteeism	Attendance Records	Decreased by 30%
2.	Decreased walking out of the class	Daily Checklist	Decreased by 30%
3.	Decreased fighting	Daily Checklist	Decreased by 80%
4.	Decreased referrals	Administrative Records	Decreased by 80%
5.	Decreased profanity	Daily Checklist	Decreased by 80%

Students shall have acquired skills that will enable them to favorably modify central nervous system and cardiovascular responses to stress in a shorter period of time than before through the use of biofeedback (see Appendix A).

Today's biofeedback equipment varies from highly

sophisticated instruments for monitoring internal functions to small and simple devices for measuring sweat-gland activity. Children are usually fascinated at seeing how they can learn to control their responses while listening to a sound or watching a dial. Biofeedback enables us to sense our own body's reponses to various stimuli. With proper training we can learn to control our body's signals. According to Halcomb (1985) while one does learn to relax, the actual goal is not to be relaxed all the time, but to be able to choose the appropriate level of response for the situation.

Description of Assessment Instruments

The attendance records consist of a vertical list of students' names with the days of the month horizontally across the top of the sheet. A check is placed under the day the student is absent.

The daily checklist is arranged in the same fashion as the attendance records with the addition of the following categories: walking out of class, fighting, and the use of profanity.

The referrals are recorded in the administrative office where an official tally is kept on a daily basis.

Description of Biofeedback Instruments

The Galvanic Skin Response (GSR) machine measures the resistance to a weak electric current through the skin. It is possible to monitor palmar secretions resulting from mobilization of the autonomic nervous

system. As sweat-gland activities increase, there is a decrease in skin resistance which results in either an increase in current flow or a drop in voltage. These changes are detected by the GSR and translated into feedback signals.

Each student was monitored to establish a daily threshold level. Once the student was connected to the machine for one minute, the percentage regulator was adjusted to read zero. Each student was given three minutes to bring the percentage regulator hand down to a maximum of 30%. At the end of the three minutes the progress or lack of was charted. By the end of the implementation period, each student having gone through the relaxation training program was successful in producing a 10 to 20% positive change on the GSR biofeedback machine in less than three minutes.

The Electromyogram (EMG) uses the change in bioelectrical potential as the basis for the EMG signal. The intensity of the signal (amplitude) is directly proportional to the number of motor units which are activated. In other words, the more muscle units activated, the larger the amplitude of the signal. Hence, the EMG signal is used as an indicator of muscle activity, the greater the muscle activity, the greater the amplitude of the signal. The EMG is like the GSR machine as far as the process required in reading and monitoring the percentage regulator. Once again, when

the correct threshold is established the student was timed for three minutes to see if the percentage can be lowered. The shorter the time used by the students, the greater their control over their bodies.

The Periferal Temperature feedback unit measures changes in skin temperature. The vessels supplying blood to the periphery of the body are surrounded by a smooth muscle. Sympathetic activation of the autonomic nervous system results in a decreased diameter of the vessel. Decreased sympathetic activity results in an increase in the diameter of the vessel and an increase in blood flow. This may be triggered by the flight-fight response. Once the student's periferal temperature was established, the time required to have a one-degree higher reading was charted. Again, the shorter the unit of time required to change the temperature one degree, the greater degree of control the student has mastered.

Analysis Procedure

A tally of the expected behavior was taken contrasting the first two weeks of implementation versus the last two. A percent increase or decrease was analyzed to determine whether the stated goals were achieved. Any decrease in the time needed to favorably modify central nervous system and cardiovascular responses were considered as meeting set goals.

CHAPTER IV

SOLUTION STRATEGY

The following studies show some of the research findings of children in regular classrooms and in exceptional programs. Relaxation training includes the various methods appropriate to children, that is, various forms of biofeedback relaxation exercises and combinations of the two methods.

Simpson and Nelson (1974) reported a preliminary study on breathing control and attention training for hyperactive children. The three experimental children were placed in a cubicle in which they received feedbacks concerning their breathing rate and the amount of discrepancy from a desired ratio. The experimental children were also given attention training, while the control group worked only on tasks in the cubicles. The experimental group showed less breathing irregularity, better performance on tasks and better attending behavior.

Martin and Hershey (1976) studied the effectiveness of biofeedback techniques in reducing the hyperactive behavior of five hyperactive and four nonhyperactive elementary children. After training sessions, the children learned to raise their finger temperatures and increase their attending behavior.

Relaxation training and biofeedback were used by

Rivera and Omizo (1980) with 36 hyperactive male children in a study measuring attention to task and impulsivity. They found significant differences between the control and experimental group, with the treatment proving beneficial for improving attention and decreasing impulsivity. Similar results were noted by Dunn and Howell (1982) in a study of 10 hyperactive males. By examining pre and posttesting scores, one can see that relaxation training increased accuracy and attending behavior and decreased body movements while engaged in quiet activity.

In a recent study, the use of biofeedback along with relaxation training exercises was conducted by Matthews and Castell (1984). During a three-month period, relaxation training using quiet reflex, autogenics and visual imagery along with wrist temperature reading were conducted for 15 minutes at the beginning of each day. The children recorded their wrist temperatures immediately before and after the relaxation exercises. Data was compiled on disciplinary referrals. These results support the hypothesis that students with relaxation training will exhibit fewer instances of explosive type of behavior compared to the students without training.

Initial research on relaxation training demonstrates that the technique can help in the reduction or

elimination of some of the common problems faced by children under stress in schools. The advantage of relaxation training is that it works, is inexpensive, is ever-present, and takes a minimum amount of time to administer.

Possible Alternative Solutions

The use of reinforcement techniques on the part of the teacher working with unmotivated alternative students is a must. By displaying a daily schedule on the board, the students are calmer when they are in a more predictable environment. For the most part they do not like surprises and react in a negative manner. Not only the schedule, but visual reminders of class rules should also be posted as well as graphically illustrating student's individual progress.

Setting realistic social and academic goals is crucial to the success of any program. There is nothing more frustrating for children than failing after doing their best. A teacher who is prepared to meet the students at their level and bring them forward at their pace will help immensely to reduce unnecessary stressful situations.

Stress is obviously a 20th-century word and it seems to be gaining in popularity. Its connotation varies considerably according to the ways in which people use it. The term stress is employed to characterize an

area of special interest to an individual with important and potentially harmful repercussions on human life. This area often lies in the realm of the person's daily activity. Events that are pleasant to some individuals can be quite a strain on others. Therefore, according to Tache and Selze (1976) stress can be defined as a person's assessment of what he or she finds is asked from the environment.

Impulsive youths exhibit a broad range of cognitive, emotional and behavioral deficits. The impulsive youth is seen as restless, easily distracted, hyperactive, emotionally uncontrolled, prone to risk taking, hyperaggressive and retaliative (Kagan, Pearson, and Welch, 1966).

Overt antisocial behavior is common when confronted with stressors. Relaxation training is expected to lengthen the brief latency period that is characteristic of the impulsive response style. Conceptually, if impulsivity is an avoidance response designed to remove the individual from an aversive stressful situation (Block, Block, & Harrington, 1974), relaxation should diminish and thereby increase latency.

The well-known biofeedback authority, Barbara Brown (1977), voices the opinion that relaxation training has a tendency to turn the child's attention inward. Thinking about internal controls reduces the

amount of attention paid to external factors and leads to a decrease in mental tension concerning social pressures. This conditioning, in turn, alters the significance that the individual attaches to external environmental situations and stimuli.

Introduction Strategy

In order to capture the alternative students' attention and keep it, the author started by introducing biofeedback machines, GSR, EMG, PTEM to the students. At this point no mention of the word stress or its relationship to biofeedback. What the author discussed is that these machines help us control our bodies in certain ways. The students were allowed to manipulate the machines under the author's supervision. The author were demonstrated using the GSR. This produced even more curiosity among the students. The students questioned the purpose of this machine, at which point the author asked the students:

> Does your body ever feel different at times? Under what circumstances does your body feel different? Do you feel uncomfortable in certain situations? How do you feel when someone makes a derogatory remark to you? Do you get angry? How does your body feel? What is happening to your body?

The author allowed the students to respond to these

questions. Some responses were, "My stomach feels tight, my heart beats fast, I get red in the face, etc." The author then asked the students, "During what situations are you made to feel uncomfortable? Note that the word stress has not been used at all. While the students were brainstorming, the author kept a list of their responses. Once the students finished, the author said that he happens to have a list of situations, many of which the students have already covered, and some new ones also. The author along with the students reviewed the list and checked the situations that were appropriate to each student individually. At this time the author conducted the Holmes and Rahe Life Events Scale Survey (Miller, 1982). This survey provided the author with some idea of the stress level of each student without his or her knowledge. Also this survey helped develop the student's self-assessment capabilities to identify personal stressors. The scale consisted of 40 events which were given a numerical value ranging from 100 to 11. The scale starts with a death of a parent given the highest rating of 100 to breaking home, school, or community rules, valued at 11. Totalling the score an average child can reach the 300 level of severe stress potential quickly. Six hours of school alone subject the students to 11 life events. The students were not given

a numerical value of the life events. These were for the author to tally and use as a gauge for each student.

The following day, after compiling the Holmes and Rahe Life Events Scale Survey, the author told the class that,

> There seem to be several events that many of you have indicated that you have in common. (Again the author reinforced the fact that these events make us feel uncomfortable or angry.) Many of these situations we have no or very little control over, but we can learn to be in more control over the ways our bodies react to these situations. We can learn to feel more in control of ourselves and of our bodies. We can learn how to a acquire the "Power Of The Guru". There is a price to be paid for any power that we want to achieve and the price for this power is learning several relaxation techniques. These various techniques will give us more control of our body and more control over those uncomfortable sensations that all of us have related that we experience from time to time. If we are willing to pay the price for the "Power" we can start right now!

Note: The author felt that the introduction to this practicum is extremely important and may influence the results. These alternative students lack motivation to an extreme. By using this type of approach, the author felt that it would and did catch their attention and provided enough curiosity for the student to want to continue for a 12-week implementation period and at the conclusion, they did acquire the skills which helped enable them to deal with stress-producing events in a more socially acceptable manner.

Description of Relaxation Techniques

The following relaxation techniques which were employed by the author with his alternative students were developed by Dr. Cary Howard McCarthy:

Deep Breathing (5 minutes)

1. Select a comfortable sitting position.

2. Close your eyes and direct your attention to your own breathing process.

3. Think about nothing but your breath, as it flows in and out of your body.

4. Say to yourself, "I am relaxing, breathing smoothly and rhythmically. Fresh oxygen flows in and out of my body. I feel calm, renewed and refreshed."

5. Continue to focus on your breath as it flows in and out, in and out, thinking of nothing but the smooth, rhythmical process of your own breathing.

6. After five minutes, stand up, stretch, smile, and continue with your daily activities.

Mental Relaxation Place (5 to 10 minutes)

1. Select a comfortable sitting or reclining position.

2. Close your eyes and think about a place that you have been before that represents your ideal place for physical and mental relaxation. (It should be a quiet environment, perhaps the seashore, the mountains, or even your own backyard. If you can't think of an ideal relaxation place, then create one in your mind.)

3. Now imagine that you are actually in your ideal relaxation place. Imagine that you are seeing all the colors, hearing the sounds, smelling the aromas. Just lie back and enjoy your soothing, rejuvenating environment.

4. Feel the peacefulness, the calmness and imagine your whole body and mind being renewed and refreshed.

5. After 5 to 10 minutes slowly open and stretch. You have the realization that you may instantly return to your relaxation place whenever you desire and experience a peacefulness and calmness in body and mind.

Tensing the Muscles (5 to 10 minutes)

1. Select a comfortable sitting or reclining position.

2. Loosen any tight clothing.

3. Now tense your toes and feet (curl the toes, turn feet in and out). Hold the tension, study the tension, then relax your toes and feet.

4. Now tense your lower legs, knees and thighs. Hold the tension, study the tension, then relax your legs.

5. Now tense your buttocks. Hold and study the tension. Relax your buttocks.

6. Tense the fingers and hands. Hold the tension, study the tension, and then relax.

7. Tense your lower arms, elbows and upper arms. Hold it, study it, and then relax.

8. Tense your abdomen. Hold the tension, feel the tension, and relax.

9. Tense your stomach. Hold the tension, feel the tension, and relax.

10. Now tense your chest. Hold and study the tension. Relax, take a deep breath, and exhale slowly.

11. Tense the lower back. Hold and study the tension, and relax.

12. Tense the upper back. Hold the tension, feel the tension, and then relax.

13. Now tense the shoulders. Tense, hold and study the tension, and then relax.

14. Now tense the neck, back and forth of your

neck. Hold the tension, study the tension, and then relax.

15. Now tense your entire head. Feel the tension in the back of your head, top of your head. Make a grimace on your face so you feel the tension in your facial muscles. Study the tension and then relax.

16. Now try to tense every muscle in your body. Hold it, study it, and then relax.

17. Continue sitting or reclining for a few minutes, feeling the relaxation flowing throughout your body. Know the difference between muscles which are tense and muscles which are relaxed.

18. Now stretch, feeling renewed and refreshed, and continue with your activities.

Thinking About Body Parts

1. Select a comfortable place to lie down. Remove shoes, loosen belt or tight clothing. Stretch out on your back, arms resting by your sides, feet slightly apart, eyes gently closed.

2. Think to yourself, "I am now going to relax completely. When I awake I will feel fully refreshed."

3. Think about your feet, wiggle your toes, flex your ankles, then "let go", let go of all the tension, and let your feet rest limp and heavy.

4. Think of the lower part of your legs, your knees and thighs, up your hips. Imagine them just

sinking into the floor, heavy and relaxed.

5. Now think of your hands. Wiggle your fingers and flex your wrists, then let go, relax.

6. Think of your lower arm, elbow, and upper arm, all the way up to your shoulders. Picture all the tension just melting away.

7. Think about your abdomen. Let the tension go, and allow your breathing to flow more smoothly and deeply.

8. Think about your stomach and chest, up to your throat and neck. As you continue breathing more deeply, just imagine all the tension flowing out and you are relaxing more and more.

9. Now think about your throat, neck, and head, feeling limp and relaxed. Relax your facial muscles. Drop the jaw, parting the lips and teeth. Picture yourself completely relaxed.

10. If you are aware of any remaining tension anywhere in the body, go to the area mentally and relax the tension.

11. Continue to remain in this completely relaxed state for 5 to 10 minutes. You may picture pleasant thoughts, or simply blank your mind and enter a stage of light sleep.

12. When you are ready to waken, say to yourself, "I have been deeply relaxed. I am now ready to wake up,

feeling completely refreshed and relaxed."

13. Begin to wake up by flexing the ankles, wiggling the toes. Then wiggle the fingers and gently shake your wrists.

14. Bend the right knee and then the left knee. Bend the right arm, then the left arm.

15. Open your eyes. Stretch each arm over your head, then slowly sit up, stand up, and stretch again. You are ready to continue with your activities.

Number Count Down (3 to 10 minutes)

1. Select a comfortable position.

2. Close your eyes and breathe deeply and rhythmically several times.

3. Take another deep breath, and while exhaling mentally visualize the number three (3), "3" is your symbol for complete body relaxation. (Relax any tension in your body, remembering the state of deep relaxation felt after the tensing muscle exercise.) Mentally repeat to yourself, "3, complete body relaxation".

4. Take another deep breath, and while exhaling visualize the number two (2), "2" is your symbol for complete brain and nervous system relaxation. (Any thoughts, fears, concerns, worries--let them all go. Relax all thought processes, feeling a sense of mental stillness and harmony.) Mentally repeat to yourself, "2, complete brain and nervous system relaxation."

5. Take another deep breath, and while exhaling mentally visualize the number one (1), "1" is your symbol for complete Oneness within yourself, complete mind-body attunement and harmony. Mentally repeat to yourself, "1, Oneness, mind-body harmony."

6. In this deep state of mind-body relaxation you are filled with calmness, peacefulness. Your are one with the creative forces of your own being and you may direct these creative forces to bring about positive changes and benefits in your daily life and health.

8. When you are ready to continue with your daily activities, say to yourself, "I have been in a deep renewing state of mind-body relaxation. I will maintain the perfect attunement I have experienced, and will be in perfect health, feeling better than ever before. I will count from one to five and at the count of five I will feel wide awake and in perfect health."

8. Then begin counting, "1...,2...,3...,4...5." Open your eyes and say out loud, "I am wide awake, in perfect health, feeling better than ever before."

Calendar of Activities

1. Week 1

   (a) Introduction to biofeedback machines.

   (b) Conducted a life event survey to measure stressors.

   (c) Manipulation of machines by students to increase their familiarity and decrease their anxiety in the use of these machines.

   (d) First Relaxation Technique: Deep Breathing. The rationale of starting with this particular exercise is that it is quite easy to follow and least demanding. A peripheral skin temperature was taken by the students before and immediately after the relaxation exercise. The results were charted and the individual student charts were exhibited in the classroom. This, the author found helped instill a sense of competition among the students.

2. Weeks 2 and 3

   (a) Students were assigned a partner who assisted in monitoring the biofeedback machines. The students took turns using the machines and doing the monitoring and charting of results under the close supervision of the author.

(b) The relaxation technique for Weeks 2 and 3 was the Mental Relaxation Place with pre and postbiofeedback charting.

3. Weeks 4 and 5

(a) Relaxation Technique: Autogenic Training Phrases. The same process was observed as in the previous weeks.

4. Weeks 6 and 7

(a) Relaxation Technique: Tensing The Muscles. More emphasis was placed on the use of the EMG machine as it is basically geared for the purpose of measuring change in bioelectrical potential which is the basis of the EMG signal. The more muscle units activated, the larger the amplitude of the signal.

5. Weeks 8 and 9

(a) Relaxation Technique: Thinking About Body Parts. Morning and afternoon sessions were charted under the supervision of the author.

6. Weeks 10 and 11

(a) Relaxation Technique: Number Count Down. As the author mentioned previously, this technique builds upon the other techniques.

7. Week 12

The students were allowed to use any technique that they found most beneficial to them.

8. Weeks 13 and 14

As mentioned earlier in the report, the first two weeks of implementation were used as a contrast to the last two weeks. The data regarding absenteeism, walking out, fighting, referrals and profanity were compiled. Posttraining questionnaire was given for the students (see Appendices B and C). The individual student biofeedback charts were analyzed and a final report with results and recommendations was submitted.

9. Week 18

Dissemination of abstract to cluster members.

CHAPTER V

RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

At the end of the implementation period, the data was compiled by the author contrasting the first two weeks with the last two weeks. The results are as follows:

1. The first objective of this practicum called for a decrease in absenteeism by 30%. This objective was not met. There were 15 absences during the first two weeks and 12 during the last two weeks. This shows a decrease of 20% in the absenteeism rate.

2. The second objective was to decrease the instances of students walking out by 30%. During the first two weeks there were five incidents of students leaving class and only one during the last two weeks. This is a decrease of 80% surpassing the 30% goal.

3. The third objective was to decrease fighting by 80%. During the first two weeks there were three incidents of fighting. A 100% decrease took place because there were no fights during the end of the implementation period.

4. The fourth objective, a decrease of disciplinary referrals by 80% was also surpassed. During the first two weeks two referrals were issued. There were no referrals during the last two weeks.

Again a 100% improvement was reached. It should be noted that the students are exposed to two other teachers during the course of the week who can and do write referrals.

5. The fifth objective to decrease the use of profanity in the classroom by 80% was also reached. There were 58 recorded uses of profanity during the first two weeks versus 17 the last two weeks, a decrease of 81%. The author did not record the use of profanity if the students caught or excused him or herself immediately. The author felt that this was a definite improvement and should not be counted against the students.

6. The sixth objective was to have the students acquire skills that will enable them to favorably modify central nervous system and cardiovascular responses to stress in a shorter period of time than before through the use of biofeedback and relaxation training. Each student, by the end of the implementation period, mastered the Galvanic Skin Response (GSR) biofeedback machine by at least a 20% positive change. Five of the eight students were able to reach a maximum of 30% change in less than the alloted three minutes. The results with the Electomyogram (EMG) were also impressive. Each student mastered the (EMG) in less than three minutes. Two of the eight students were

timed under one minute consistently. The Periferal Temperature feedback unit which measures change in skin temperature was also mastered by each student. Again, the shorter the unit of time required to change the temperature one degree, the greater degree of control by the student. All students were able to change their temperatures favorably.

Prior to beginning the implementation of the biofeedback and relaxation training, the author was apprehensive as to how his students would react. Surprisingly, all of the students showed great enthusiasm especially for the biofeedback machines. Two of the students immediately were impressed with the (GSR) machine and this opened the way for the rest to follow. The students liked the biofeedback so much that they argued over who was next to use them. After the training sessions and after their assignments were completed, the students preferred the biofeedback machines to the Apple computers in the classroom. They set up their own competition as to which one could in the shortest time reach the highest results.

In addition to the group approach, the author also had individualized training. He found that the students responded more favorably when the training was more personalized. This also held true for the academic subjects. Having small numbers to work with made for

easy individualization. This approach would not be feasible in a regular classroom with 30 or more students.

At one point during the implementation, the administrator of the Central Area Alternative Program came in to try the (GRS) machine. Without previous training he was unable to favorably manipulate the machine to the delight of the students. The students were amused and laughed with inner pride knowing that they could do something that he could not. Also several teachers tried their skills at biofeedback with the same uneventful results. This was another boost for the student's self-esteem.

As a whole, the implementation was a success. The students realized that they can learn to modify their central nervous system and cardiovascular responses. There was a positive attitudinal change. Their spontaneous overt reactions to seemingly stressful situations seemed more stable and under more control. The students began to reinforce each other in a positive manner. Statements such as, "O.K., just relax man, chill out, take a deep blow and let it go, count to ten," became common place. These types of statements took the place of previously verbal abuse and teasing. This carry over was quite a pleasant surprise.

The Holmes and Rahe Life Events Scale Survey Results

According to this chart, a total of 300 points accumulated from the life events scale indicates a level of severe stress potential. Each of the 40 events is scaled from a high of 100 points to 11 points in value. Of all the students (8) who took the survey, a total of 2,964 points were recorded. This was an average of 370 points or 70 points above the level of severe stress potential. All of the students surpassed the 300 mark individually. This scale was administered individually by the author explaining each life event. The results were not surprising. Each of the students have backgrounds and histories which would be conducive to high ratings and high stress potential.

Dissemination Package

This practicum has been discussed with the Educational Research Department of the School Board of Broward County and a copy will be sent to them. Also, copies will be made available to each Alternative Center in Broward County. An abstract will be given to each cluster member.

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APPENDIX A

EQUIPMENT NOTES

Equipment_Notes

Student's Name:

Session Number:

Date:

Type of biofeedback:

Equipment used: GSR and EMG

Instrument_settings	Initial_values	Final_values
Amplitude:		
Display threshold:		
Time:		
Beginning		
End		
Type of feedback:		
1. Visual		
(a) lights		
(b) meter		
2. Audio		
3. Verbal		

	Temperature	
	Initial	Final
Setting:		
Temperature:		
Thermistor Placement:		
Time:		
Beginning		
End		

APPENDIX B

POSTTRAINING QUESTIONNAIRE

Posttraining Questionnaire

1. Do you feel you are better able to relax quickly?

Strongly Agree	Agree	Disagree	Strongly Disagree

2. Do you feel you can relax more deeply?

Strongly Agree	Agree	Disagree	Strongly Disagree

3. Do you feel you have a better understanding of relaxation?

Strongly Agree	Agree	Disagree	Strongly Disagree

4. Do you feel the biofeedback helped you to relax?

Strongly Agree	Agree	Disagree	Strongly Disagree

5. Did you like the biofeedback training?

Strongly Agree	Agree	Disagree	Strongly Disagree

APPENDIX C

POSTIMPLEMENTATION

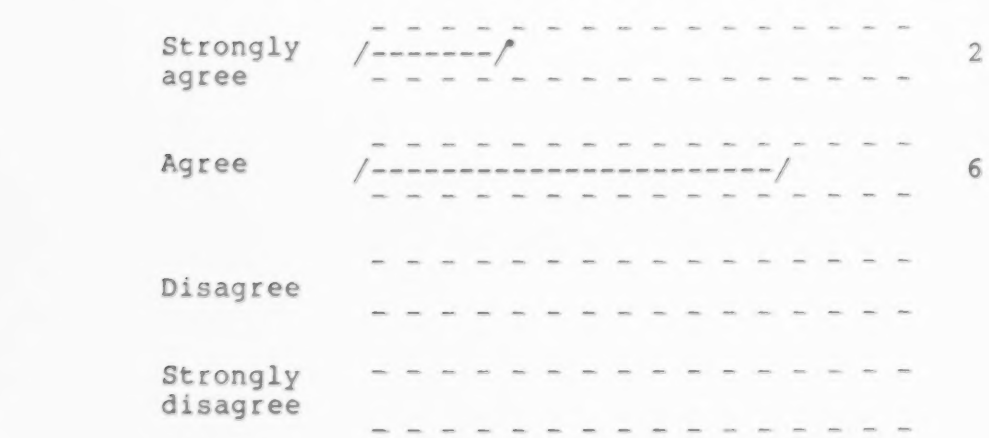
QUESTIONNAIRE RESULTS

Post-Implementation Questionnaire Results

The eight students were given a posttraining questionnaire consisting of five questions with the following results:

1. Do you feel you are better able to relax quickly?

2. Do you feel you can relax more deeply?



3. Do you feel you have a better understanding of relaxation?

Strongly agree /----------/ 6

Agree /-------/ 2

Disagree

Strongly disagree

4. Do you feel the biofeedback helped you to relax?

Strongly agree /----------/ 8

Agree

Disagree

Strongly disagree

5. Do you like the biofeedback training?

Strongly agree /----------/ 8

Agree

Disagree

Strongly disagree